J Anesth (2015) 29:974
DOI 10.1007/s00540-015-2034-8

LETTER TO THE EDITOR

Lanthanum carbonate hydrate causes artifacts on ultrasound

Kaori K. Kuroiwa[1] · **Mana Nakazawa**[1] · **Masaaki Nishizawa**[1]

Received: 25 December 2014 / Accepted: 10 May 2015 / Published online: 7 June 2015

To the Editor:

We experienced a case of high brightness artifacts on abdominal ultrasound sonography (US).

A 66-year-old Japanese male was scheduled for a laparoscopic nephrectomy. He receives haemodialysis from when he was 36 years old 3 times a week for chronic renal failure. Hemodialysis-induced hyperphosphatemia had developed and oral treatment with lanthanum carbonate hydrate (LCH) had been given. General anesthesia was induced, and we attempted a transversus abdominis plane (TAP) block. On the US view, we found a high echoic signal in the intestine (Supplementary material 1). On abdominal computed tomography (CT), high brightness artifacts were also found in the intestine (Supplementary material 2). Thus, we thought these artifacts were caused by a high-contrast substance in the intestine.

After the operation, a nephrologist told us that the origin of the high-density material in the intestine might be LCH.

LCH is a non-aluminum, non-calcium phosphate binder containing lanthanum, which has been available in Japan since 2009. LCH tablets can be visualized clearly on plain X-ray film and CT [1].

It has been reported that diffuse opacities can be visualized in the intestine on plain X-ray films and on CT in patients taking LCH orally [2]. As well as abdominal US, transesophageal echocardiography is affected by LCH [3]. Most such reports have been made by nephrologists and radiologists. Anesthesiologists perform transesophageal echocardiography and abdominal US, and also need to be familiar with the characteristics of LCH.

Conflict of interest None to report.

References

1. Chung CL, Chiou SY, Li SY, Jian DY, Chen JY. The case: a peritoneal dialysis patient with an unusual abdominal film. Kidney Int. 2007;72:1291–2.
2. Hiromitsu H, Minoru M, Tetsuro S, Hidenori Y, Tomonari K, Shin-ichiro K. Beamhardening artifacts on computed tomography images caused by lanthanum carbonate hydrate in a patient on dialysis. Jpn J Radiol. 2010;28:322–4.
3. Pafcugova J, Horackova M, Hraskova M, Forejt J, Szabo M, Padr R. Radio-opaque appearance of lanthanum carbonate in a patient with chronic renal failure. Nephrol Dial Transplant. 2008;23:1776–8.

Electronic supplementary material The online version of this article (doi:10.1007/s00540-015-2034-8) contains supplementary material, which is available to authorized users.

✉ Kaori K. Kuroiwa
karyuo2001@yahoo.co.jp

[1] Department of Anesthesia, Nagano Red Cross Hospital, Wakasato, Nagano 380-8582, Japan